For: Portal Asset Holdings Ltd.
Port Road, Killarney

PROPOSED RESIDENTIAL DEVELOPMENT

Outline Construction Environmental Management Plan

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MHL & Associates Ltd.
Consulting Engineers

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1.0 INTRODUCTION

1.1 Overview

The purpose of this Outline Construction Environmental Management Plan is to provide details on the manner in which the proposed residential development at Port Road, Killarney will implement measures, in a comprehensive and integrated approach to ensure protection of the environment during construction on site.

The report details the specific requirements that shall be addressed during construction phase of the project and includes the roles and responsibilities of individuals involved in the project. It identifies the environmental considerations associated with the construction process and outlines the work practices, management, mitigation, and monitoring strategies which shall be implemented, as required to ensure the project is carried out in accordance with best practice, minimum impact on the surrounding environment and maximum safety throughout the duration of the scheme.

This plan includes the project's Construction and Demolition Waste Management Plan, which will ensure that optimum levels of waste reduction, reuse and recycling are achieved throughout the duration of the project.

1.2 Site Location

The application site, which is currently greenfield, is located on the eastern side of Killarney Town Centre along the Port Rd (N71) and is adjacent to the N72 roundabout which leads to Killorglin, Tralee, and Cork. The northern and eastern boundaries of the site adjoin existing residential developments. The southern boundary adjoins the playing fields of Killarney Community College. The lands subject to the permitted development are unoccupied and undeveloped. Previously the site was used for the grazing of livestock as it once formed part of the Mercy Order farm and school.

Figure 1.1: Site Location

1.3 Scope

Portal Asset Holdings Ltd. intend to apply for planning permission for a Large-Scale Residential Development (LRD) at Port Road and St Margaret's Road, Coollegrean, Inch, Knockreer, Ardnamweely, Derreen (townlands), Killarney, Co. Kerry.

The proposed development will consist of 224 no. units comprising 76 no. two storey houses (8 no. 2 bed units, 38 no. 3 bed units and 30 no 4 bed units), 52 no. duplexes over 3 no. storeys (14 no. 1 bed units, 26 no. 2 bed units and 12 no. 3 bed units) and 96 no. apartments in 3 no. 4 no. storey buildings (16 no. 1 bed units and 80 no. 2 bed units), and a 2 no. storey creche (334 sq. m). Ancillary site works include public and communal open spaces, hard and soft landscaping, the relocation/undergrounding of ESB powerlines, wastewater infrastructure including foul pumping station, surface water attenuation, water utility services, public lighting, bin stores, bicycle stores, ESB substation, and all associated site development works.

Vehicular access to the development will be via a new entrance from Port Road. The proposed development includes upgrade works to Port Road, a pedestrian connection to Millwood Estate, and improvements to the stormwater network on St. Margaret's Road, as part of enabling infrastructure for the project.

The following figure presents the proposed site layout the subject of this planning application:

Figure 1.2: Proposed Site Layout

1.4 Site Specific Details

The site area is sloping towards the western/southern boundaries thereby giving opportunity for drainage and open space in these areas. Primarily the lands are composed of farmland with the eastern portion of the site being of previously part developed lands. A stream flows in a westerly direction along the southern boundary of the site.

2.0 PROJECT RESPONSIBILITIES

2.1 Assignment of Responsibilities

The Contractor appointed by Portal Assets Holdings Ltd. to undertake the construction works, shall be responsible for implementing the project-specific Construction Environmental Management Plan (CEMP) incorporating the methodologies and measures described in this plan.
To ensure the CEMP remains 'fit for purpose' for the duration of the project, the CEMP shall be reviewed and updated by the Project Manager during the life of the project.

The anticipated roles and responsibilities of the key parties involved in the implementing the CEMP are set out below.

Personnel	Role	Duties/Responsibilities
PROJECT MANAGER	Liaises with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the main contractor's project team.	• Implementing of the CEMP and • Implementing the Health and Safety Plan • Management of the construction project • Liaison with the client/developer • Liaison with the Project Team • Assigning duties and responsibilities in relation to the CEMP • Production of construction schedule • Materials procurement • Maintaining a site project diary
CONSTRUCTION MANAGER	Liaises with the Environmental Manager when preparing site works where there is a risk of environmental damage and manages the construction personnel and general works.	• Implementing the Construction Environmental Management Plan. • Assigned Project Management Duties. • Implementing the Health and Safety Plan under the direction of the PSCS • Liaison with the Process Contractors. • Monitoring the Construction Schedule. • Maintaining a Site Project Diary. • Assisting in maintaining the Site Queries and Complaints Register.
ENVIRONMENTAL MANAGER	Ensures that the CEMP is effectively implemented.	• Implementing the Environmental Procedures of the CEMP and updating it as necessary. • Management of all Environmental aspects of the Construction Works and Audit of Controls. • Review and Approval of Method Statements relating to Environmental aspects. • Ensuring Implementation of Mitigation Measures. • Training of Staff in all Environmental issues. • Liaison with Construction Manager.

PROJECT ECOLOGIST	The Project Ecologist will report to the Environmental Officer and is responsible for advising on all ecological monitoring activities	The responsibilities and duties of the Project Ecologist will include the following: • Ensure effective monitoring. • Ensure effective implementation of any measures required as set out in the CEMP
ALL SITE PERSONNEL		The site personnel appointed by the Contractor are responsible for: • adhering to the relevant Environmental Control Measures and relevant site-specific Method Statements • adhering to the Health and Safety Plan • reporting immediately to the Environmental Manager and Construction Manager any incidents where there has been a breach of agreed procedures

The Contractor shall designate a Site Engineer/Manager/Assistant Manager as the Construction Waste Manager and who will have overall responsibility for the implementation of the Project WMP.

The Waste Manager will have the authority to instruct all site personnel to comply with the specific provisions of the Plan.

A technically competent person will also be required to assess waste arisings and determine.
classification in accordance with the Hazardous Waste List.

At operational level, a foreman from the Contractor and appropriate personnel from each sub-contractor on the site shall be assigned the direct responsibility to ensure that the discrete operations stated in the Project WMP are performed on an on-going basis.

Where the need arises, the Contractor, shall employ the services of an approved Specialist Waste Management Sub-Contractor to assist with the safe management and disposal of contaminated waste materials. They shall specialize in the investigation of such material, the carrying out of sampling and testing of hazardous material and the preparation of treatment and disposal methodologies.

A report and method statement shall be finalised for the safe removal and disposal of the identified hazardous materials.

2.2 Reporting

The Site Manager / Project Manager is responsible for collating and maintaining all reporting, including all environmental and compliance documentation.

2.3 Training and Awareness

An initial Site Environmental Induction and ongoing Training will be provided to communicate the main provisions of the Environmental Plan to all Site Personnel.

Two-way communication will be encouraged to promote a culture of Environmental Protection. The information which must be communicated to Site Staff includes:

- Environmental Procedures of the C.E.M.P.
- Environmental Buffers and Exclusion Zones
- Housekeeping of Materials and Waste Storage Areas
- Environmental Emergency Response Plan
- Reporting Procedures

2.4 Environmental Performance Indicators

The Project Contractor will record the key performance indicators for the site in gauging successful site management in the effective prevention of pollution and the protection of the environment. Environmental performance indicators will at a minimum include:

- Number of environmental accidents/incidents logged.
- Breach of procedure and corrective actions.
- Number of environmental complaints received.
- Results of dust monitoring.
- Results of noise and vibration monitoring, and
- Results of site audits.

2.5 Environmental Incidents / Complaints Procedure

In the unlikely event of an environmental incident, or breach of procedure, or where a complaint is received, the contributing factors shall be investigated, and remedial action taken as necessary. The Main Contractor will ensure that the following response actions will take place:

- The Project Manager must be informed of any incident, breach of procedure and/or complaint received, and details must be recorded in the incident/complaint register.
- The Project Manager shall conduct/co-ordinate an investigation to determine the potential influence that could have led to the non-compliance.
- The Project Manager shall notify and liaise with the appropriate site personnel where required,
  e.g. Site Environmental Manager, Project Ecologist Project Archaeologist
- If necessary, the Project Manager will inform the appropriate regulatory authority. The appropriate regulatory authority will depend on the nature of the incident.
- The details of the incident will be recorded on an Incident / Complaints Form which is to record information such as the cause, extent, actions, and remedial measures used to follow the incident/complaint. The form will also include any recommendations made to avoid re-occurrence of the incident.
- The Project Manager will be responsible for any corrective actions required as a result of the incident e.g. an investigative report, formulation of alternative construction methods or environmental sampling, and will instruct the Main

Contractor as appropriate.

- The Site Project Manager is to ensure that the relevant environmental management plans/procedures are revised and updated as necessary.

2.6 Environmental Targets and Objectives

Targets

- Zero pollution incidents
- Segregation of site waste to include timber, general waste, and other materials.
- Completion of environmental checklists
- Fuel spill kits to be present on each site at all times.
- Maintain all waste documentation including waste transfer notes, for all waste movements including contractors.

Reporting Specific Objectives

- Environmental incidences to be reported to Site Manager without delay.
- Documentation will be reported to the planning authority on a 4-weekly basis:
- Environmental incidents and nonconformities raised, including nature, status, corrective and
- preventive actions and potential for statutory intervention.
- Key environmental issues raised.
- Significant environmental incidents.
- Complaints and the current status of those complaints.
- Actions or interventions undertaken by enforcement bodies.

Site Specific Objectives

- Reduce waste, water and energy use on the project including within all of the site offices.
- Ensure that everyone complies with the environmental requirements.
- Reduce the carbon footprint of the development.
- Reduce the amount of construction waste and excavated material generated which goes to landfill.
- Zero pollution incidents onsite.
- Recycle construction waste where possible.
- Maximise beneficial reuse of the materials: and
- Ensure that all waste documentation (waste transfer dockets, permits etc.) is available for inspection at the site office / in head office.

3.0 CONSTRUCTION MANAGEMENT

3.1 Introduction

3.1.1 Indicative outline of works phasing

The proposed application is for the delivery of 224 residential units and a 46-child creche. A scheme plan showing the three proposed phases as well as the location of the proposed compound and the main construction access from N71 Port Road is shown in **Figure 3.1**.

A contractor for the site will be appointment pending a successful outcome of this planning application. The appointed contractor will develop a site-specific phasing plan which will be issued to KCC. For the proposes of this outline CEMP, the site will be developed in three phases:

- Phase 1: The total developable Phase 1 site is to contain 76 dwellings in total and the childcare facility. The Phase 1 site is envisaged to take approximately 15 months to complete fully.
- The total developable Phase 2 site is to contain 52 Duplex Units and is envisaged to take 12 months to complete.
- The total developable Phase 3 site is to contain 96 apartments inclusive of under croft parking and is envisaged to take 15 months to complete.

Figure 3.1: Proposed Outline Phasing Diagram

3.1.2 Construction Stage Methodology

Having regard to the scope of the site works and processes, a detailed scheme of works is described in the following sub-sections.

3.1.2.1 Pre-commencement Activities

Before works commences a number of preparatory activities will be carried out. The following key works will be undertaken as part of the site preparation and pre-development activities:

- Prior to undertaking groundworks, a professional land surveyor shall be appointed to carry out demarcation works and establish benchmarks on site. Whereupon a joint survey to confirm existing ground levels shall be carried out with the consulting engineers.
- Any detailed ground investigations required to support the site regrading process will be carried out and finalized.
- Any pre-commencement archaeological survey.
- Pre- commencement noise survey.
- Pre- commencement dust survey.

Treatment of Invasive Species:

- Prior to the construction phases beginning on site, it is proposed that the identified Invasive species (Japanese Knotweed) on site will be treated and buried at 5.0m below the Finished level of the central green area within the site. Refer to the Invasive Species Management Plan for more details. The material removed from the centre of the site to facilitate these works will be stockpiled on site and used where possible to provide the fill to raise the height of lower areas on site at construction stage.

Enabling Works:

- These will have been completed prior to the construction processes and will be as per the Construction Management Plan.

Temporary Site Compound

Once the main entrance is in place and the bulk excavation has reached the appropriate stage, the temporary construction facilities will be established. These will include:

- Site offices, canteen and toilet / changing facilities c/w temporary water supplies and wastewater treatment unit.
- Secure compound and containers for storage of materials and plant.
- Temporary vehicle parking areas.
- Contained area for machinery refuelling and construction chemical storage.
- Contained area for washing out of concrete and mortar trucks.
- Wheel-washing facilities for vehicles leaving the site.

A security/Heras fencing will be provided at the main N71 Port Road entrance. All vehicles and personnel will be checked on entry to ensure no unauthorized access or fly-tipping will occur within the site. Heras fencing will also be provided on all boundaries to adjoining lands.

Water supply for the construction facilities will be taken from the mains supply which is adjacent the site. Power for the pumps and small power requirements for construction activities will be supplied from diesel generators until such time as the permanent site power supply is available.

3.1.2.2 Phased Based Construction

The construction of Phase 1 will commence once all regulatory notices have been issued to the relevant authorities. The following processes will be repeated for each phase of development and will be carried out in accordance with the requirements of the adopted CEMP.

Bulk Excavation:

- The areas of the site which are currently above the required levels shall be excavated using machinery to remove the topsoil, subsoil, and underlying bedrock as necessary.
- The materials removed from the cut areas shall where possible be used to provide the fill to raise the height of lower areas on site.
- Any excess materials which are surplus to the fill requirements will be removed from site, however minimizing the volume of material to be removed from site will be a key consideration in the civil design, and in determination of the most appropriate site levels.
- In addition, the early works on site will see the establishment of a temporary site accommodation and parking area for the site construction staff.

Civil Works:

- The initial civil concrete works will involve the pouring of the foundations for each of the prepared buildings in this phase. Once the foundations are poured and have cured it will allow the building envelope to be erected.
- It is envisaged that a concrete block construction process will be used which will involve the delivery of blockwork to site followed by external finishing material such as brickwork, plaster, and roof tiles.
- Construction materials will be sourced locally where practicable.
- Works on external services including water mains, foul sewers, storm sewers, roads, footpaths, and public lighting will be carried out in conjunction with the completion of the units.
- All buildings will be constructed in accordance with current Building Regulations and certified by an appropriated qualified engineer during and after construction.

Landscaping:

- In tandem with the other construction activities being carried out

on the buildings, elements of the sites landscaping plan will be progressed. The formation of landscape features will take place in parallel to the early works, utilising material excavated during the cut and fill exercise. As the site build progresses the landscape works will begin to focus on the soft landscaping aspects such as establishment of green zones and walkways, as well as planting of trees and shrubs in designated areas.

- Peripheral planting will be installed during the first planting season to ensure boundary interfaces are as robust as possible upon occupation.
- No herbicides will be used in the landscape preparation of the public open spaces, to minimise impact on natural drainage systems. The only use of herbicides will be in the private rear gardens prior to amenity grass installation.

3.1.2.3 Construction Impact Assessment

The potential impacts of the construction process have been considered by each separate discipline including materials and quantities associated with the re-grading works.

The following mitigation measures are proposed where potentially significant impacts have been identified:

- The moving and storage of excess material has been kept to a minimum and has informed the phased delivery of the scheme.
- Excavated material shall be stored on-site to be re-used for later stages of the development.
- The site investigations have identified that certain quantities of subsoil can be re-used as structural fill via soil strengthening methods. These works will be carried out on site within the designated area and measures shall be implemented within this area to control the run-off of storm water.
- Given the topography of the site control measures to protect surface waters from contamination will be put in place prior to the commencement of any site works.

3.1.2.4 Control of Surface Water Run-off

The control measures relating to surface water run-off during the construction phase of the development shall follow best practice as recommended by CIRA 2010 and ISO 14001:2015 – Environmental Management Systems and C741 Environmental good practice on site guide (4th edition) and CIRIA (2015) Coastal and marine environmental site guide (second edition) (C744).

Measures to be implemented will consist of:

- Surface water shall be directed to settlement ponds where topographically feasible. Where this is not practicable the surface water shall be allowed to percolate to ground and/or be removed by

tanker to a designated waste-water treatment plant if excessive build-up of surface water on site occurs

- Protection of surface water gullies or drains using silt fences.
- Use on-site bund structures (including incorporating existing ditches) on site to retain surface waters on site and to prevent runoff from the site.
- Minimal and short-term storage and the removal of excess materials (soil, stones, and construction wastes) off site in an efficient manner
- Daily checks of surface water regime on site and logging of same
- Works associated with excavations or earth moving not to be undertaken in periods of forecasted bad weather.
- Drainage channels beside construction roadways to direct surface water to settlement areas and allow for natural percolation to ground.
- Ensure good site management is maintained at all times during the construction phase including regular site clean-ups and use of appropriate bins.
- Chemicals or fuel/oils shall be stored in temporary bunded storage areas and plant is re-fuelled via delivery trucks in specific bunded re-fuelling areas, rather than the storage of large quantities of fuel on site in a designated bunded area.
- The pouring of concrete, application of chemicals, painting or any other activity that has the possibility of being toxic to aquatic life shall be undertaken in a control and isolated manner, preventing the possibility of any pathway to a surface water source.

3.1.2.5 Biodiversity and Invasive Species

Biosecurity protocols shall be implemented during the proposed project to prevent the introduction of invasive species, in particular those listed on the 3rd Schedule of the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011), to site and the further spread of diseases.

The following measures will be adopted:

1. All equipment intended to be used at the site shall be: -
   i. power steam washed at a suitably high temperature or at least 65 degrees, or
   ii. disinfected with an approved disinfectant, e.g. Virkon or an iodine-based product. It is important that the manufacturer's instructions are followed and if required, the correct contact times are allowed for during the disinfection process. Items that are difficult to soak shall be sprayed or wiped down with disinfectant.
2. During the duration of the proposed project, if equipment is removed off-site to be used elsewhere, the equipment shall be cleaned and

disinfected prior to being brought back to the works area of the proposed project.

3. Appropriate facilities shall be used for the containment, collection, and disposal of material and/or water resulting from washing facilities of vehicles, equipment, and personnel.
4. Importation of materials shall comply with Regulation 49 of the EC (Birds and Natural Habitats) Regulations 2011.

3.2 Hours of Working (Hours of Site Operation)

Works will occur within the hours:

07.00am – 07.00pm* (Monday – Friday inclusive)
07.00am – 4.00pm* (Saturday)
There will be no work on Sunday and Bank Holidays.

** The working day may extend at times when critical elements of work need to be advanced. Longer working days can occur when there is a planned concrete pour. If extended working hours are required, these will be agreed in advance with the planning authority. Accordingly, traffic generated by core construction personnel will be during the off-peaks and will not have a significant adverse impact on the road network.*

3.3 Site Storage

Materials for inclusion as part of the works will be stored within the allocated compound. No products will be placed outside of this area. Materials will be brought to site periodically to suit the programme for the works.

Earthworks arising will be stored within the identified space and will be sampled, processed, and placed within the works or removed off site in accordance with the Waste Management Plan (Section 4 of this report).

3.4 Construction Access

It is proposed to use the main access from the Port Rd as the construction site access, for the entirety of the project. Construction traffic accessing/exiting the site will be directed to the adjoining N72 roundabout to ensure that all traffic avoids adjoining New Rd which services the local schools and avoids the Killarney Town Centre.

An internal temporary roadway from the site entrance will be formed by placing a geotextile grid on the existing ground along the proposed route to a width of approximately 8m. The geotextile grid will then be surfaced dressed to provide a clean surface. A filter drain will be placed on the side of the roadway. The filter drain will collect water from the temporary road surface, and this will be directed towards an interceptor & soak away where it will disperse to ground. The temporary access road and entrance will be removed following completing of the site regrading works.

A wheel wash is proposed at the temporary entrance and all vehicles will use this facility when entering or leaving the facility. In addition, occasional road sweeping using mechanical means will be used on the local road so as to avoid the build-up of any dust or residues from vehicular traffic.
During the construction of phase 2 a temporary haul road will be constructed using a geotextile grid. This road will be routed through Phase 3 site to minimize any disruption to the completed phase 1.

3.5 Liaison

The Project Manager, will be responsible for project strategic liaison whilst the Construction Manager
will be responsible for day-to-day liaison and logistics for all the construction related activities. Both will be permanently based on site with the Project Manager the first point of contact for the project team and client/developer and the Construction Manager shall be the first point of contact for all concerns, issues, and complaints. A display board will be erected outside the site, which as minimum will identify key personnel contact addresses and telephone numbers.

Newsletters, liaison meetings, progress photos, and organised site visits will be communication methods which shall be used to provide information to the public.

3.6 Site Specific Traffic Management Plans (TMP's)

All public roads, accesses, drains, ditches, and grips will be kept clear of all dirt, mud and material arising from the execution and completion of the Works and suitable clearing equipment and labour will be provided by the Contractor for this purpose. Attention will also be given to the loading of lorries carrying bulk materials into the Site and spoil from the Site to ensure that these will not be overloaded or loaded in such a way that spillage is avoided. Any dirt or mud adhering to the tyres or chassis of any vehicles will be thoroughly cleaned off before the vehicle is permitted to leave the Site. In the case of delivery to the Site, vehicles will be thoroughly cleaned before they leave the point of collection. The Contractor will be equally responsible for the vehicles of his sub-contractors and suppliers and the like.

An automatic wheel-washing unit shall be installed and maintained at the entrance to the site (Refer to Site Compound Layout). This will be available for use at all times. Maintenance will include for cleaning out of the equipment and disposal of any material gathered within. The required equipment for supplying water and power to the wheel washing facility shall be made available and maintained in good working order. At the end of the construction phase, the wheel washing facilities shall be removed from site.

3.7 Complaints

The Complaints that may be received will be logged, assessed and appropriate action taken as soon as practicable. It will be critical to ensure that key issues are properly addressed from the outset to create a good working relationship and an integrated team approach to resolving potential issues before they arise.

3.8 Vehicle Movement & Deliveries

Deliveries will be co-ordinated to prevent queuing of vehicles which could adversely affect traffic.
flow and to minimise disruption to local traffic. Deliveries will be timed and coordinated to avoid conflict with collection of waste, other deliveries (particularly adjoining landowners) and rush hour traffic (AM & PM peak hours as identified in the Traffic & Transportation report). Large deliveries will be scheduled outside peak hours to minimise disruption.

On occasion, with the agreement of the planning authority out of hours deliveries and collections shall be implemented to facilitate the smooth continuation of works and minimise disruption.

3.9 Site Security

The site will be strictly controlled with an on-site security person logging entry and exits. This will include all on-site personnel. These measures will be developed in conjunction with the Project Supervisor Construction Stage.

3.10 Road Safety

Measures to keep pedestrians and vehicles adequately separated will be implemented on-site. This is of particular importance for the proposed development, as it is proposed for the public to occupy the site as individual phases are complete.

The following actions will help be taken to keep pedestrians and vehicles apart:

- Entrances and exits - separate entry and exit gateways for pedestrians and vehicles shall be provided with a gate man in attendance to interface with the traffic and public to facilitate safe access and egress of vehicles.
- Walkways - firm, level, well-drained pedestrian walkways will be provided.
- Crossings - where walkways cross roadways, a clearly signed and lit crossing point shall be provided where drivers and pedestrians can see each other clearly.
- Visibility - drivers driving out onto public roads will be required to be able to see both ways along the footway before they move on to it.
- Obstructions - walkways shall be kept free of construction vehicle obstruction.
- All workers shall be competent to operate the vehicles, machines, and attachments they use on site.
- Personnel directing vehicle movements will be trained and authorized to do so. Access to vehicles will be managed and people alerted to the risk.

The following shall provide on site during the construction phase:

- Aids for drivers - Mirrors, CCTV cameras or reversing alarms will be provided that can help drivers see movement all-round the vehicle.
- Banksmen will be appointed to control manoeuvres and who are trained in the task.
- Lighting – The site will be properly lit so that drivers and pedestrians on shared routes can see each other easily. Lighting may be needed after

  sunset or in bad weather.
- Clothing - Pedestrians on site will wear high visibility clothing.

- Signs and instructions
- All construction personnel, drivers and pedestrians shall be informed of the routes and traffic rules on site. Use standard road signs where appropriate.
- Induction training shall be provided for drivers, workers and visitors and send instructions out to visitors before their visit.
- All the construction vehicle drivers and supply chain personnel shall be competent and have relevant training and certification appropriate for their job.

3.11 Plant & Equipment

The typical Plant and Equipment to be employed during the construction works are listed in **Table 3.2** below.

Plant Item	Purpose
Hydraulic excavators – various	Excavation, substructures, drainage
Mobile cranes- various	Erection of buildings, movement of large materials and plant
Dumpers	Excavations, drainage, landscaping, movement of materials
Concrete saw cutting	Used for cutting concrete slabs in yard areas, building substructure and superstructures.
Volvo dump trucks	Removal of demolition materials off site
Ready-mix concrete trucks	Delivery of concrete to site for new structures, slabs, etc.
Pump unit for ready-mix concrete	For placement of concrete.
Vibrating rollers	Used for compacting stone in roads, yard areas, substructures etc
HGV – 20-foot trailers	Delivery of materials, steel, cladding, concrete blocks,
HGV – 40-foot trailers	Delivery of structural steel, cladding, large elements of new plant and equipment
Telescopic site handlers	Handling and moving materials on site
Road sweeping equipment	Management of dust and excavation residues on site and off site on road approaches.
Welding gear	Demolitions, erection of structural steel and in mechanical installations
Elevation platforms	For use by employees erecting steel, cladding and general construction at height.
Small tools – grinders, saws, drills, Kango hammers, power floats, temporary lights, water pumps, concrete vibrators	For use during all stages of construction

Table 3.2 List of typical plant required for this Project.

4.0 CONSTRUCTION & DEMOLITION WASTE ARISING &

MANAGEMENT

Waste management will be a core assigned responsibility of the management company who will directly employ a licensed waste management contractor for the safe removal and disposal of waste from the development.

Prevention of Waste Generation
Preventing the generation of excessive levels of waste will be encouraged via the management company on an individual basis and is preferable to any form of waste management detailed below.

Segregation of Waste in the Home
Residents will be required to segregate their waste into the following waste categories within their own apartment units:

- Dry Mixed Recyclables;
- Mixed Non-Recyclables;
- Organic (food and garden) waste;
- Glass (segregated by colour).

The Environmental Protection Agency's (EPA) Household Food Waste and Bio waste regulations are designed to promote the segregation and recovery of household food waste. Adherence to the EPAs guidance notes on the segregation of domestic waste will be recommended.

Reuse or Recycling of Items to Avoid Landfill
The reuse and recycling of items will be encouraged as the preferred option to disposal. This action is well supported by existing reuse and recycling infrastructure in the local area – in the form of charity shops and local bring centres.

Use of Brown Bins for Organic Waste
The Compositing Association of Ireland has prepared a recommended list of acceptable materials for a household brown bins in order to standardise household brown bin schemes across the country. The appropriate use of brown bins in the scheme will be encouraged for diverting of 'organic waste' towards more productive uses.

Waste Generation
The number of on-site waste storage receptacles will be a direct output of a waste generation model 1 related to development occupancy which predicts waste types, weights and volumes arising from the operational development. This will be finalised with the waste contractor pursuant to any grant of planning permission.
At this point, a number of dedicated bin stores have been provided for in the site layout plan reflecting envisaged future requirements. In line with the Kerry CDP 2022 Policy 1.5.4.12 Waste Management, these bins will provide for onsite segregation, with further off-site segregation provided by the waste contractor as necessary.
This will be kept under review by the management company. Waste volumes are recorded by the refuse collection company allowing for full audit trail. The management company is responsible for presenting waste for collection. Waste and recycling collections take place weekly. Bin trucks will enter the site and appropriate means of access has been verified by means of the submitted autotrack analysis.

Other waste will be presented for collection at a designated area next to the public road consistent with practices in urban areas. The bins will be conveyed by personnel nominated by the building management company to the collection point. Once emptied they will be promptly returned to the bin storage area. It is recommended that waste collection times/days are staggered for the different waste types to reduce the number of waste collection vehicles requiring access to the collection point at any one time. All waste receptacles presented for collection will be clearly identified as required by waste legislation and the requirements of any local Waste Bye-Laws. Also, waste will be presented for collection in a manner that will not endanger health, create a risk to traffic, harm the environment or create a nuisance through odours or litter. All off-site disposal of waste is carried out in accordance with the carriers' Waste Collection Permit.

4.1 Analysis of Waste Arising from the Construction Stage (including Demolition)

It is anticipated that a significant amount of material arising from the works will be classified for re-use.
as fill material under roads and pavements. The objective is to ensure the absolute minimum amount of material leaves the site as waste.

The following main waste arisings, including surplus materials, which are likely to be generated during the project are presented in **Table 4.1** hereunder.

Waste Type	European Waste Classification Code	Waste Classification
Concrete Kerbs	17 01 01	Non-hazardous
Concrete (ex. Roads)	17 01 01	Non-hazardous
Concrete (ex. Footpaths)	17 01 01	Non-hazardous
Soil and Stones	17 05 04	Non-hazardous
Scrap Metal	17 04 05	Non-hazardous
Bitumen/Tarmacadam	17 03 02	Non-hazardous
Surplus Cabling	17 04 11	Non-hazardous
Plastic Pipe Cut-offs	17 02 03	Non-hazardous
Biodegradable Garden and Parks Waste	20 02 01	Non-hazardous
Plastic Packaging	15 01 02	Non-hazardous
Paper and Cardboard Packaging	15 01 01	Non-hazardous
Mixed Municipal Waste	20 03 01	Non-hazardous
Waste construction material containing asbestos	17 06 05	Hazardous

Table 4.1 Main Waste Types & EWC Codes

For the purposes of this plan, it is assumed that all of the soil and stone waste arising from the project.
will be categorised as non-hazardous and will be kept on-site. Fill material generated on site will be strengthened to ensure it can be used as aggregate construction material on the development. Full laboratory analysis will be completed prior to the start of works to confirm exact soil strengthening requirements.
Topsoil excavated will be stored for re-use on the site.

During the construction phase, typical wastes arising include:

- Excavation wastes
- Construction waste from building materials such as Off Cuts of Metal and Insulation
- Pipe Off Cuts, Wrapping, Insulation, Weld Rods
- Materials Wrapping
- Oils, Filters, and Cleaning Materials
- Food Waste, Packaging Materials, Dry Recyclables
- Metal, Wire
- Wash Out from Trucks

All wastes will be managed, collected, stored, and segregated in separate areas and removed off site by a licensed waste management contractor at regular intervals during the works. All concrete trucks will have to return to their respective yards for washout.

4.2 Types of Materials

As with most construction projects, the materials required for this development will include imported stone, masonry, and concrete. The principal construction materials will be:

- Concrete, sub-structures, Ground Floor, Timber Floors.
- Steel reinforcement used in concrete.
- Structural steelwork used for equipment support, roof structure, hand railings.
- Partitions incorporating studwork and panelled walls.
- Secondary steel work.
- Masonry concrete block work.
- Stone fill.

4.3 Opportunities for Re-use/Recycling

Material arising from site clearance works will be stored at different locations according to material identification:

- Stockpile 1 - excavated topsoil
- Stockpile 2 - excavated sub-soils suitable for reuse as structural fill.
- Stockpile 3 - excavated materials unsuitable for reuse as structural fill

Removed topsoil will be kept separate from the general spoil. All turfs and topsoil will be stored on geotextile matting. Once deposited, the topsoil will be trafficked to the minimum possible extent to prevent damage and dusting.

Stockpiled sub-soils will be located in an area away from drainage ditches and will be bunded on the down gradient edges with a silt curtain or other suitable materials to reduce risk of silt run-off.

All excavated material is being proposed for the purposes of filling or general landscaping on site. However, should any surplus or rejected excavated material be generated, it is to be transported off the site to an approved waste facility. It will be tested in advance of disposal to verify the acceptability of the constituents.

5.0 ENVIRONMENTAL ISSUES & MANAGEMENT REQUIREMENTS

An environmental review of the proposed scheme has been undertaken and Environmental Management procedures (EMPs) will be implemented for managing the environmental impacts of Activities associated with the development Project. (Refer to **Table 5.1 below and Appendix 1**). The environmental management procedures (EMPs) set out the principles to be adhered to and outline commitments and measures that are to be implemented during the works, so as to ensure that potential environmental impacts and disturbance to local residents will be minimized or eliminated.

The control measures will only be amended by improvement with regards to environmental protection and will take cognizance of any additional Environmental Commitments arising from planning conditions. The Contractor will ensure that plans/procedures are communicated to all site staff, including sub- contractors, through induction, training and at relevant meetings.

Ref:	Procedure: -
EMP-1	Fuel and Oil Management
EMP-2	Construction Traffic Management
EMP-3	Waste Management
EMP-4	Noise Management
EMP-5	Dust Management
EMP-6	Site Environmental Training and Awareness
EMP-7	Environmental Emergency Response
EMP-8	Monitoring and Auditing Procedure
EMP-9	Environmental Accidents, Incidents and Corrective Actions Procedure
EMP-10	Environmental Complaints Procedure
EMP-11	Odour Control Procedure
EMP-12	Light Pollution Control Measures
EMP-13	Surface Water Management and Run-off Control Measures

Table 5.1 Environmental Management Procedures (Refer Appendix 1)

6.0 MITIGATION

The proposed development aims to prioritize the retention and protection of existing trees on site while also introducing additional tree planting to create green corridors throughout the project area, reinforcing the natural greenery of the surrounding environment in Killarney. A diverse range of building types, characterized by various colours and materials, will be incorporated into the design to blend harmoniously with the local landscape. The planting scheme will be carefully selected to suit the site's location and character, with landscaping elements such as mounding, wildflower, and grass seeding consistent with the masterplan's objectives. Quality soil will be used for landscaping, adhering to relevant standards to ensure long-term sustainability and environmental compatibility.

Prior to the initiation of construction, the developer will submit a comprehensive construction methodology for approval by the County Archaeologist and the National Monuments, with a commitment to refrain from any activities within the agreed buffer zone for this monument. Temporary hoarding or fencing, designed to be non-invasive, will be erected along the agreed buffer zone during construction to prevent accidental damage from construction traffic or activities. Throughout the construction phase, an archaeological consultant licensed by the National Monuments Service will monitor any sub-surface groundworks within the statutory zone of notification associated with KE066-066. If any archaeological material is discovered, work in that area will halt, and the local authority archaeologist and National Monuments Service will be notified. A preservation strategy will then be proposed, aiming to record and, where possible, preserve any archaeological findings in situ. If preservation in situ is not feasible, an excavation program will be initiated, with subsequent steps taken only after consultation with the relevant authorities. A comprehensive report detailing all archaeological activities will be submitted to the County Archaeologist and the National Monuments Service upon completion.

The contractor will appoint a qualified individual to oversee the implementation of measures aimed at preventing pollution of the aquatic environment during the construction phase. Within the construction compound, adequate parking facilities will be provided for site workers, and a designated wash-down area will ensure the safe disposal of any contaminated water from equipment cleaning. Throughout construction, measures will be implemented to manage site run-off and protect existing drainage networks from excessive silt load. Topsoil preservation and careful scheduling of topsoil stripping will be prioritized, with stockpiling kept away from water sources. Bare areas will be promptly covered, seeded, or planted to minimize uncontrolled runoff into the drainage system. Excavated material will be deposited in designated areas, and the scheme drainage system will undergo daily inspection to address any issues promptly. For dewatering of excavations, a suitable scheme will be developed to maintain water quality, with groundwater pumped to settlement tanks for treatment before discharge into the drainage network. Regular monitoring of discharged water for hydrocarbon sheen and suspended solids will ensure compliance with environmental standards. These practices aim to mitigate negative impacts on water quality and safeguard aquatic ecosystems during construction activities.

Storage of construction materials will adhere to strict guidelines, with designated storage areas used to minimize stockpile size and ensure materials are kept away from watercourses and machinery. Fuels, oils, and hazardous materials will be stored securely in designated areas within the site compound, with bunding and double-skinned tanks/container systems to prevent spills. Refuelling of construction plant will occur only at designated locations within the compound, with trained operatives handling the process and regular inspections conducted to detect leaks. Spill control measures, including the provision of spill kits and an emergency response plan, will be implemented to prevent contamination of soil and drainage networks. The use of concrete will be carefully managed to avoid spillage near drainage features, with designated areas for washout and disposal of wash water. Construction wheel-wash facilities will be installed at all entrances/exits to

clean vehicles leaving the site, with regular cleaning to prevent residue buildup. Works will commence only during suitable weather conditions, with agreement from relevant local authorities. These measures aim to ensure environmental protection and compliance with regulations throughout the construction process.

Typical measures proposed to mitigate the impact on badger habitats during construction are as noted. Exclusion zones around active badger setts will be demarcated before construction begins, with a maximum exclusion zone of 50 meters during the breeding season (December to June) and 30 meters outside of this period. Supervision by a Project Ecologist will be required for any works within these exclusion zones, with the authority to halt construction if ecological impact is anticipated. Lighter machinery and hand clearance will be utilized within 10-20 meters of active setts, while heavy machinery within 30 meters will be minimized and supervised by the ecologist. Noise barriers will be installed between active sett entrances and construction activities. All contractors will receive training on badger sett procedures, and site offices will be located at least 50 meters away from setts. Construction activities will be restricted to daylight hours, timed to minimize disturbance to badgers, and excavations over 1 meter deep will be covered at night to prevent animal falls. Existing hedgerow vegetation around setts will be preserved and enhanced according to the landscape plan.

Additional infrastructure and measures to control water quality during construction will include minimizing exposed soil, storing stockpiles at least 30 meters away from the Folly stream on level ground with silt barriers at the base, and directing dewatering away from the stream to designated percolation areas. Check dams will be installed on drains to reduce water velocity, and daily and weekly weather forecasts will be monitored to anticipate any potential impacts on water quality. Site clearance activities such as tree felling and vegetation clearance will be scheduled outside the bird breeding period from March to August, with confirmation from a qualified ecologist required if clearance is necessary during this period. Water quality control measures outlined in CIRIA 2010 and ISO 14001:2015 standards, as well as environmental good practice guides, will be implemented to protect the water quality of the Folly stream. Biodiversity and invasive species protocols are to be implemented with a separate Invasive Species Management Plan prepared by MWP.

Please refer to the design teams submitted information for details on mitigation measures outlined from their respective discipline.

Prior to construction stage, the appointed contractor will provide further details on control plans as part of the Construction Stage CEMP.

Appendix 1- Environmental Management Procedures

EMP-1 Fuel and Oil Management

EMP-2 Construction Traffic Management

EMP-3 Waste Management

EMP-4 Noise Management

EMP-5 Dust Management

EMP-6 Site Environmental Training and Awareness

EMP-7 Environmental Emergency Response

EMP-8 Monitoring and Auditing Procedure

EMP-9 Environmental Accidents, Incidents and Corrective Actions Procedure

EMP-10 Environmental Complaints Procedure

EMP-11 Odour Control Procedure

EMP-12 Light Pollution Control Measures

EMP-13 Surface Water Management and Run-off Control Measures

EMP 1	FUEL AND OIL MANAGEMENT PROCEDURE
Purpose	Measures for the management of all fuels on site for the protection of ground and watercourses from any spills.
Responsibility of Control	Environmental Manager Construction Project Manager
Procedure	<u>Refuelling</u> • Refuelling will be carried out using 110% capacity double bunded mobile bowsers. The refuelling bowser will be operated by trained personnel. The bowser will have spill containment equipment which the operators will be fully trained in using. • Plant nappies or absorbent mats to be place under refuelling point during all refuelling to absorb drips. • Mobile bowsers, tanks and drums shall be stored in secure, impermeable storage area, away from drains and open water. • To reduce the potential for oil leaks, only vehicles and machinery will be allowed onto the site that are mechanically sound. An up-to-date service record will be required from the main contractor. • Potential leaks from delivery vehicles will be reduced by visually inspecting all vehicles for major leaks. • In the unlikely event of an oil leak or spill, the leak or spill will be contained immediately using oil spill kits; the nearby dirty water drain outlet will be blocked with an oil absorbent boom until the fuel/oil spill has been cleaned up and all oil and any contaminated material removed from the area. This contaminated material will be properly disposed of in a licensed facility. • The Environmental Manager will be immediately informed of the oil leak/spill and will assess the cause and the management of the clean-up of the leak or spill. The Environmental Manager will inspect nearby drains for the presence of oil and initiate the clean-up if necessary. • Immediate action will be facilitated by easy access to oil spill kits. An oil spill kit that includes absorbing pads and socks will be kept at the site compound and also in site vehicles and machinery. • Correct action in the event of a leak or spill will be facilitated by training all vehicle/machinery operators in the use of the spill kits and the correct containment and cleaning up of oil spills or leaks. This training will be provided by the Environmental Manager at site induction. • In the extremely unlikely event of a major oil spill, a company who provide a rapid response emergency service for major fuel spills will be immediately called for assistance, their contact details will be kept in the site office and in the spill, kits kept in site vehicles and machinery. **<u>Oil storage.</u>** • Fuel containers must be stored within a secondary containment system e.g. bund for static tanks or a drip tray for mobile stores. • Collision with oil stores will be prevented by locating oils within a steel container in a designated area of the site compound away from vehicle movements.

	Leakages of oil from oil stores will be prevented by storing these oils in bunded tanks which have a capacity of 110% of the total volume of the stored oil. Ancillary equipment such as hoses and pipes will be contained within the bunded storage container. Taps, nozzles, or valves will be fitted with a lock system.

Procedure (Continued)	• The volume of leakages will be prevented through monitoring oil storage tanks/drums for leaks and signs of damage. This will be carried out daily by the Environmental Manager. • Long term storage of waste oils will not be allowed on site. These waste oils will be collected in leak-proof containers and removed from the site for disposal or re-cycling by an approved service provider.
Environmental Controls	• Mobile bowsers, tanks and drums will be stored in secure, impermeable storage area, away from drains and open water. • Fuel containers must be stored within a Secondary Containment System, e.g. bund for static tanks or a drip tray for mobile stores. • Ancillary equipment such as hoses, pipes must be contained within the bund. • Taps, nozzles, or valves must be fitted with a Lock System. • Fuel and Oil Stores including tanks and drums must be regularly inspected for leaks and signs of damage. • Only designated Trained Operators are authorized to refuel plant on site and emergency spill kits will be present at equipment for all refuelling events. • Procedures and contingency plans will be set up to deal with emergency accidents or spills. • Suitable spill response materials and emergency instruction shall be available on site and staff shall have been adequately trained
Monitoring	Daily visual inspection of storage areas for • Damage to containers or ancillary equipment. • Leakages • Unlocked storage container

EMP 2	**TRAFFIC MANAGEMENT**
Purpose	Measures for the management of all traffic, including construction traffic and oversized loads, for the minimization of disturbance and nuisance to the local community.
Responsibility of Control	Construction Project Manager Construction Personnel
Procedures	• Details of site access and any site traffic rules, including security, parking, loading, and unloading, required speed or other relevant details. • Details of equipment delivery. • Site operating hours (including delivery). • Communicating with the community, and the Local Authority the Gardaí where required.
Environmental Controls	Public Road • In order to mitigate from a significant impact during peak traffic hours, the majority of staff will either arrive on-site before or after the peak morning traffic ()8:00-09:00) and finish work before or after the evening peak traffic hours (17:00-18:00). • The condition of the public road will be monitored on an on-going basis and a road sweeper provided to clean the public road if required. Site Entrance • There will be no parking of any vehicles on the public road near the site entrance. • Adequate parking will be provided on site for both employees and visitors. • The condition of the site entrances will be monitored on an on-going basis and a road sweeper provided to clean the public road if required.
Monitoring	Daily checks

EMP 3	**WASTE MANAGEMENT PROCEDURE**
Purpose	Measures for the management of all wastes associated with the Project including all welfare facilities.
Responsibility of Control	Construction Project Manager Environmental Manager
Procedures	The following wastes may be generated during the construction of the project: - • Surplus excavated soils. • Waste Fuels; Oil / Diesel • Paper / Cardboard • Non-Hazardous Office and Canteen Waste • Wastewater from Office and Welfare Facilities Wastes must be segregated and stored in the allocated tanks, bins, skips or areas. Implement Storage Areas and organize the relevant Licensed Contractors for the appropriate waste collections. Ensure all Permits and Licenses are in place and maintain relevant copies in the Site Office. Wastewater from holding tanks must be collected by an appropriate Licensed Contractor. Construction materials must be stored and managed in a way which promotes waste minimization, including segregating materials for re-use as appropriate.
Environmental Controls	Appropriate waste receptacles will be provided on site.
Monitoring	Daily Visual inspection for • Damage • Untidiness • Full skips

EMP 4	**NOISE MANAGEMENT**
Purpose	Measures for the management of impacts surrounding areas to the site, nuisance noise and construction noise impacts. The objective of this plan is to provide a framework for construction noise and vibration management to ensure that noise and vibration levels at neighbouring buildings remain within reasonable limits throughout the works.
Responsibility of Control	Construction Project Manager Construction Personnel
Procedures	Implement control measures to ensure that noise impacts are minimized. The following measures will be communicated to all Staff on site. • All Plant and Machinery will be maintained to ensure noise and air emissions are minimized. • Only use required power and size of equipment • Fit engine exhausts with silencers • Operate equipment in a quiet and efficient manner. • Do not leave equipment idling unnecessarily. • Regularly inspect and maintain equipment. • Use quiet reversing alarms/methods. • Use designated routes and access points for deliveries
Environmental Controls	Adequate inspection of plant and equipment in operation shall be carried. out to ensure that noise and vibration levels do not exceed the permitted levels.
Monitoring	Noise Monitoring at nearest sensitive receptors

EMP 5	**DUST MANAGEMENT**
Purpose	Measures for the management of impacts on air quality and nuisance dust
Responsibility of Control	Construction Project Manager
Procedures	• All Plant and Machinery will be maintained to reduce dust and air emissions. • Construction personnel must not leave any Plant and Machinery running unnecessarily. • To reduce dust and particular blown around site, dust suppression measures shall be implemented in prolonged, dry, and windy spell including standard dust suppression (spraying), as required. • Stockpiles should be located at suitably sheltered areas to prevent erosion or weathering and shall be located away from drainage ditches. • Public roads in the vicinity of the site will be regularly inspected for cleanliness and cleaned as necessary. • A temporary vehicle wheel wash facility will be installed in proximity to the site entrance. • The dust minimization control measures shall be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimization of dust through the use of best practice and procedures.
Environmental Controls	Adherence to dust management measures
Monitoring	Monthly dust deposition monitoring program to be undertaken

EMP 6	SITE ENVIRONMENTAL TRAINING AND AWARENESS PROCEDURE
Purpose	To describe measures for the training of all Site Personnel in the protection of the Environment and the relevant controls.
Responsibility of Control	Construction Project Manager
Procedures	▪ Environmental awareness and training shall be achieved by: – Site induction, including relevant environmental issues. – Environmental posters and site notices. – Method statement and risk assessment briefings. – Toolbox talks, including instruction on incident response procedures. – Key project specific environmental issues briefings. ▪ All managers and supervisors will be briefed on the CEMP. ▪ Method Statements will be finalised for specific activities and will include all environmental protection and mitigation measures identified in this CEMP and emergency preparedness appropriate to the activity covered. ▪ Method Statement briefings will be given before personnel carry out key activities for the first time. ▪ Environmental Training Records are to be retained in the Site Office.
Environmental Controls	▪ Site staff shall be competent to perform tasks that have the potential to cause a significant environmental impact. Competence is defined in terms of appropriate education, training, and experience.
Monitoring	N/A

EMP 7	ENVIRONMENTAL EMERGENCY RESPONSE PLAN
Purpose	To describe Measures for the prevention of an Environmental Accident or Incident and the response required to minimize such an event.
Responsibility of Control	Construction Project Manager
Procedures	In the unlikely event of an Environmental Emergency, all Personnel will react quickly and adhere to this Procedure. The following outlines some of the information, on the types of emergency, which must be communicated to Site Staff: - • Release of Hazardous Substance – Fuel or Oil Spill • Flood Event – Extreme Rainfall Event • Environmental Buffers and Exclusion Zones Breach • Housekeeping of Materials and Waste Storage Areas Breach • Stop Work Orders due to Environmental Issue or Concern (threat to Archaeological or Ecological Feature) If any of the above situations occur; the Plan is activated. The Construction Project Manager must be immediately informed and report to the scene. The Construction Project Manager must be aware of the: - • Nature of the Situation – Brief Description of What Has Happened • Location of the Incident • Whether any Spill has been Released • Whether the Situation is under Control
Environmental Controls	All Personnel are to be inducted in the provisions of the Environmental Emergency Response Plan.
Monitoring	n/a

EMP 8	MONITORING AND AUDITING PROCEDURE
Purpose	To describe measures for Environmental Monitoring during the Construction Works and audit of control measures to ensure Environmental Protection.
Responsibility of Control	Construction Project Manager Construction Environmental Manager
Procedures	All mitigation measures, any Planning Conditions and relevant Construction Methods will be monitored on site. The Appointed Contractor will provide Audit Checklists to ensure regular checks of the site's Control Measures for the ongoing protection of the environment. Monitoring is to be carried out in adherence with the following: - • Fuel and Oil Management Plan • Waste Management plan. • Dust Management Plan • Construction Noise Monitoring Checklists for weekly or monthly Site Audits shall be finalised and the relevant Personnel informed of their duties. Checklists should include (but are not limited to) confirmation that fuel is stored appropriately, that management rules are adhered to, all environmental buffers are maintained, sediment control measures are in place and functioning.
Environmental Controls	Compliance with site management rules
Monitoring	All Environmental Records, including completed Checklists, will be retained at the Site Office.

EMP 9	ENVIRONMENTAL ACCIDENTS, INCIDENTS AND CORRECTIVE ACTIONS PROCEDURE
Purpose	To describe measures for the recording, investigation, and close-out of any Environmental Accidents or Incidents on the Site
Responsibility of Control	Project Manager Project Environmental Manager
Procedures	Any Environmental Accidents and Incidents occurring on site during the Works must be reported, recorded, and investigated. Any corrective actions must be put in place and closed out after an Accident or Incident occurs. Environmental Accidents and Incidents may include but are not limited to: - • Accidents involving large spill of fuel (Emergency Response required). • Spills of fuel and oil (Minor) • Waste or rubbish left around the site (not in dedicated waste areas) • Failure of any control measures • Unplanned vehicle movement within a buffer zone. If an Environmental Accident or Incident occurs, personnel must inform *Project Manager / Environmental Officer / Nominated Person* immediately. Once the situation is under control, the Environmental Accident or Incident must be recorded, and the cause investigated. Any remedial action required must be taken to mitigate any damage and prevent a reoccurrence. Corrective actions must be communicated to Personnel and Sub-Contractors where relevant – particularly where it results in a change in procedure
Environmental Controls	Compliance with site management rules
Monitoring	As required

EMP 10	ENVIRONMENTAL COMPLAINTS PROCEDURE
Purpose	To describe measures for the recording and resolving of complaints by Third Parties, including Local Residents or Members of the Public.
Responsibility of Control	Project Manager Project Environmental Manager

Procedures	Any Environmental complaints received, whether internal or external, must be recorded and investigated. Immediate action must be taken as relevant to resolve Environmental complaints to avoid any nuisance to the Local Community or Environmental Damage. This Procedure includes - • Recording of any complaints to the Site Register incorporating communication from the Public. • Follow up by the relevant Site Representative – Environmental Officer. • Remedial Measures where required. • Ongoing communication with complainant to confirm resolution. • Any required Training or communication with Site Personnel and Sub- Contractors as a result.
Environmental Controls	Compliance with site management rules
Monitoring	n/a

EMP 11	ODOUR CONTROL PROCEDURE
Purpose	To describe measures to minimise potential for malodours emissions associated with the works
Responsibility of Control	Project Contractor Project Environmental Manager
Procedures	• Control potential odours during excavation by minimising the working surface area and covering with a clean fill as soon as practical. • In the unlikely event that putrescent wastes/soils or materials be unearthed during excavation, a deodoriser might be needed to minimise emissions of malodorous gases to the atmosphere. • Transport any odorous wastes in covered vehicles. • Ensure sedimentation ponds and drainage systems are functioning correctly to above becoming stagnant. • Ensure sanitary facilities are appropriately maintained and Wastewater from holding tanks routinely collected and removed by an appropriate Licenced Contractor. • Ensure wastes are stored correctly in appropriate waste receptacles. • Ensure all wastes, in particular food wastes, are removed from site at regular internal. • Ensure all plant is in good working order.
Environmental Controls	Adherence to odour management measures and site management rules
Monitoring	n/a

EMP 12	LIGHT POLLUTION CONTROL MEASURES
Purpose	To describe measures to minimise obtrusive light associated with the works on local residents and other sensitive receptors
Responsibility of Control	Project Contractor
Procedures	The following measures will be implemented, as required: • Dim or switch off lights where it is safe to do so. • Use low lighting equipment where feasible. • Use of timers and sensors for switching off lights/ flood lights • Avoid flood lighting in areas adjacent to sensitive nearby receptors. • Light shielding will be implemented where light glare is a nuisance. • Outdoor artificial lighting for site security shall be designed to face downwards and inward to the site and oriented to avoid significant light spill by means of selection of appropriate fitting with filters/screens and with suitable Lux levels.
Environmental Controls	Adherence to light pollution controls and site management rules
Monitoring	n/a

EMP 13	SURFACE WATER MANAGEMENT AND RUN-OFF CONTROL MEASURES
Purpose	Measurements for the control and management of all surface waters associated with the site during construction
Responsibility of Control	Project Contractor
Procedures	The following measures will be implemented: • Implement erosion control to prevent runoff flowing across exposed ground and become polluted by sediments. • Intercept and divert clean water runoff away from construction site runoff to avoid cross-contamination of clean water with soiled water. • Implement the erosion and sediment controls before starting site clearance/construction works. • Minimise area of exposed ground by maintaining existing vegetation that would otherwise be subject to erosion in the vicinity of the development and keeping excavated areas to a minimum. • Install a series of silt fences or other appropriate silt retention measure where there is a risk of erosion runoff to watercourses from construction related activity particularly if working during prolonged wet weather period or if working during intense rainfall event. • Implement sediment control measures that includes for the prevention of runoff from adjacent intact ground that is for the separation of clean and 'dirty' water. • Install appropriate silt control measures such as silt-traps, check dams and sedimentation ponds. • Washout from concrete trucks and plant will not be permitted on site. • Provide recommendations for public road cleaning where needed particularly in the vicinity of drains. • Controls need to be regularly inspected and maintained otherwise a failure may result, such as a build-up of silt or tear in a fence, which will lead to water pollution so controls must work well until the vegetation has re-established; inspection and maintenance is critical after prolonged or intense rainfall. • Develop checklists for weekly Site Audits, which must be finalised by the Appointed Contractor and the relevant Personnel informed of their duties;
Environmental Controls	Adherence to surface water management and run-off control plan and site management rules
Monitoring	Daily visual inspection of controls to ensure appropriately operating

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